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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/098,604	03/16/2002	Michael Seul	4363-4010US3	7665
7590	08/09/2005		EXAMINER KIM, PETER B	
Eric P. Mirabel Bioarray Solutions 35 Technology Drive Warren, NJ 07059			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/098,604	<b>Applicant(s)</b> SEUL ET AL.	
	<b>Examiner</b> Peter B. Kim	<b>Art Unit</b> 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 15 and 28-31 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-7, 15 and 28-31 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☒ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 21, 2005 has been entered.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it contains more than 150 words.

Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (Jain) (6,312,134) in view of Nakagawa et al. (Nakagawa) (5,528,392).

Jain discloses an apparatus for programmably generating an illumination pattern superimposed onto a substrate, said illumination pattern having a predetermined arrangement of light and dark zones, said apparatus comprising: an illumination source (1); a reconfigurable mask (3) composed of an array of pixels comprising a digital micromirror device, said pixels being actively controllable and directly addressable by means of a computer-controlled circuit and computer interface, said computer-controlled circuit being operated using a software program providing temporal control of the intensity of illumination emanating from each pixel so as to form the illumination pattern comprising the predetermined arrangement of light and dark zones; and a projection system (4) suitable for imaging the reconfigurable mask onto the substrate (5) by permanently altering a physical chemical property of the substrate surface in accordance with the pattern. Jain also discloses controlling pixels to adjust levels of transmissivity or reflectivity (col. 15). However, Jain does not disclose substrate displaying lowered impedance in illuminated region and upon application of an AC voltage, the electric field in the illuminated region is greater in the illuminated region and imaging and recording the superimposed image of the illumination pattern. Nakagawa discloses in col. 10, lines 52-62, substrate with lowered impedance in the illuminated region and greater electric field in the illuminated region. Nakagawa also discloses controller (53) and display (57) for imaging and recording the pattern. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate of Nakagawa and the controller and display of

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Nakagawa to the invention of Jain in order to form images whose tone corresponds to the density of the image as taught by Nakagawa in col. 2, lines 39-43.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (Jain) in view of Nakagawa and Datta et al. (Datta) (5,567,304).

Jain discloses an apparatus for programmably generating an illumination pattern superimposed onto a substrate, said illumination pattern having a predetermined arrangement of light and dark zones, said apparatus comprising: an illumination source (1); a reconfigurable mask (3) composed of an array of pixels comprising a digital micromirror device, said pixels being actively controllable and directly addressable by means of a computer-controlled circuit and computer interface, said computer-controlled circuit being operated using a software program providing temporal control of the intensity of illumination emanating from each pixel so as to form the illumination pattern comprising the predetermined arrangement of light and dark zones; and a projection system (4) suitable for imaging the reconfigurable mask onto the substrate (5) by permanently altering a physical chemical property of the substrate surface in accordance with the pattern. Jain also discloses controlling pixels to adjust levels of transmissivity or reflectivity (col. 15). However, Jain does not disclose an imaging system incorporating a camera capable of viewing said substrate with superimposed illumination pattern. Jain also does not disclose a substrate comprising planar electrode being separated by a gap containing electrolyte. Nakagawa discloses in col. 3, lines 36-44, an image system incorporating a camera for viewing the substrate with the pattern. Datta discloses in col. 12, lines 5-34, a substrate with electrodes and gap filled with electrolyte. Therefore, it would have

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been obvious to one of ordinary skill in the art at the time of invention to provide the camera of Nakagawa to the invention of Jain in order to observe the image on the substrate to ensure that the pattern is superimposed at the correct location as taught by Nakagawa in col. 3, lines 45-50 and to provide the substrate of Datta to Jain in order to avoid the contact resistance problem as taught by Datta in col. 1 and 2.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (Jain) in view of Nakagawa as applied to claim 1 above, and further in view of Datta et al. (Datta).

The further difference between the claimed invention and modified Jain is a substrate comprising planar electrode being separated by a gap containing electrolyte. Datta discloses in col. 12, lines 5-34, a substrate with electrodes and gap filled with electrolyte. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the substrate of Datta to Jain in order to avoid the contact resistance problem as taught by Datta in col. 1 and 2.

Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (Jain) in view of Nakagawa as applied to claim 28 above, and further in view of Walt et al. (Walt) (6,266,459).

The further difference between the claimed invention and modified Jain is generating pattern on the surface of substrate by exposure of solvent, a chemical reaction and the wavelength of the light in the visible spectrum. Walt discloses generating pattern on the surface of substrate by exposure of solvent, a chemical reaction and the wavelength of the light in the visible spectrum (col. 12, line 60-col. 13, line 33, col. 15, lines 1-23). Therefore, it would have

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been obvious to one of ordinary skill in the art at the time of invention to provide the generating the substrate pattern as taught by Walt by using the light in the visible spectrum to the invention of Jain in order to produce an accurate pattern on the substrate.

### ***Response to Arguments***

With the filing of RCE, applicant refers to applicant's arguments filed on Jan. 18, 2005. However, the arguments on Jan 18 is in response to the office action of Nov. 2004, which includes rejection based on Murakami reference. The final office action of Apr. 2005, withdrew Murakami reference and included rejection based on Nakagawa reference. There is no response to the rejection based on Jain in view of Nakagawa.

Further, there is no response to the objection to the abstract of the previous office action.

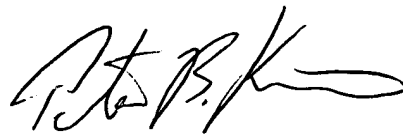
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'P. B. Kim', with a long horizontal flourish extending to the right.

Peter B. Kim  
Primary Examiner  
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August 6, 2005